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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,989	02/08/2002	Randy Dinkins	028750-219	9928

7590 01/30/2006

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EXAMINER

KUBELIK, ANNE R

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/067,989

Applicant(s)

DINKINS ET AL.

Examiner

Anne R. Kubelik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 8,9,15-27,32 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,10-14,28-31 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1 December 2005 has been entered.
2. Claims 1-34 are pending.
3. This application contains claims 8-9, 15-27 and 32-33 and claims reciting Arabidopsis MinE, both of which are drawn to inventions nonelected with traverse in Paper No. 10. A complete reply to the final rejection must include cancellation of nonelected claims and deletion of nonelected subjected matter from the examined claims or other appropriate action (37 CFR 1.144). See MPEP § 821.01.
4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. The rejection of claims 1-7, 10-14 and 28-31 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn in light of Applicant's amendment of the claims.
6. The rejection of claims 1-2 and 5-7 under 35 U.S.C. 102(b) as being anticipated by Huang et al (1996, J. Bacteriol. 178:5080-5085) is withdrawn in light of Applicant's amendment of the claims.

Claim Rejections - 35 USC § 112

7. Claims 1-7, 10-13, 28-31 and 34 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a vector encoding the *Arabidopsis* MinD protein, plants and cells transformed with it and a method of using it to produce a plant with one or few chloroplasts, does not reasonably provide enablement for vectors comprising a gene encoding a protein with the same functional activity as the *Arabidopsis* MinD protein or having a “significant amount of homology to” the *Arabidopsis* MinD protein, plants and cells transformed with them and a method of using them to produce a plant with one or few chloroplasts. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. The rejection is repeated for the reasons of record as set forth in the Office action mailed 1 March 2005, as applied to claims 1-7, 10-14 and 28-31. Applicant’s arguments filed 1 September 2005 have been fully considered but they are not persuasive.

Applicant urges that because the claims recite a specified homology range, the claimed genes can be identified without undue experimentation (response pg).

This is not found persuasive because the specification does not teach how to make the claimed nucleic acids. Thus, undue experimentation would be required to make them.

8. Claims 1-7, 10-13, 28-31 and 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The rejection is repeated for the reasons of record as set forth in the Office

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action mailed 1 March 2005, as applied to claims 1-7, 10-14 and 28-31. Applicant's arguments filed 1 September 2005 have been fully considered but they are not persuasive.

Applicant urges that because the claims recite a specified homology range, the claimed genes can be identified without undue experimentation (response pg 10).

This is not found persuasive. Applicant's arguments are drawn to enablement, not written description. The specification does not describe the necessary and sufficient structural elements of protein encoded by the *Arabidopsis* MinD gene.

9. Claims 1-7, 10-13, 28-31 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Dependent claims are included in all rejections. The rejection is repeated for the reasons of record as set forth in the Office action mailed 1 March 2005, as applied to claims 1-7, 10-14 and 28-31. Applicant's arguments filed 1 September 2005 have been fully considered but they are not persuasive.

Claims 1, 10 and 28 are indefinite in their recitation of "a protein with the same functional activity as a protein encoded by the *Arabidopsis thaliana* ... *MinD* gene". It is unclear which protein encoded by the *MinD* gene is being referred to. Additionally, it is not clear what the exact function of the *Arabidopsis* MinD protein - what proteins does it interact with, what is its exact enzymatic activity?

Applicant urges that the amendment to specify the homology range make clear which proteins are being referred to (response pg 11).

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This is not found persuasive because the claims still refer to the protein encoded by the MinD gene, and any DNA can encode many proteins. It is suggested that a SEQ ID NO: for the protein be recited in the claim. The other 112, 2nd rejections are obviated by Applicant's amendment of the claims.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-7, 10-13, 28-31 and 34 are rejected under 35 U.S.C. 102(a) as being anticipated by Colletti et al (2000, Curr. Biol. 10:507-516). The rejection is repeated for the reasons of record as set forth in the Office action mailed 1 March 2005, as applied to claims 1-7, 10-13 and 28-31. Applicant's arguments filed 1 September 2005 have been fully considered but they are not persuasive.

Applicant urges that Colletti put the vector in Arabidopsis, where the Arabidopsis MinD gene would be endogenous, while the Applicants put it in tobacco, where it would be exogenous; this is an important structural difference (response pg 12).

This is not found persuasive. Intended use does not change the structure of a composition; the structure is the same in both cases. Applicant does not point to any structural difference between a vector comprising a nucleic acid encoding an Arabidopsis MinD protein

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where the user intends to put it into Arabidopsis vs a vector comprising a nucleic acid encoding a nucleic acid encoding an Arabidopsis MinD protein where the user intends to put it into some other plant; both comprise a nucleic acid encoding an Arabidopsis MinD protein. The vector taught by Colletti et al is a species of the vectors comprising nucleic acid encoding proteins with 95% identity to the protein encoded by the Arabidopsis MinD gene claimed in the instant application.

It is noted that the vector of Colletti et al and the vector taught on pg 20, lines 7-26 of the instant specification both comprise the Arabidopsis MinD coding sequence operably linked to the 35S promoter.

Furthermore, as genes comprise a promoter and a coding region, and as the 35S promoter is exogenous to a plant, the construct used by Colletti et al is exogenous to Arabidopsis.

12. Claims 1-7, 10-13, 28-31 and 34 are rejected under 35 U.S.C. 102(a) as being anticipated by Kanamaru et al (2000, Plant Cell Physiol. 41:1119-1128 and GenBank Accession No. AB030278, December 2000). The rejection is repeated for the reasons of record as set forth in the Office action mailed 1 March 2005, as applied to claims 1-7, 10-13 and 28-31. Applicant's arguments filed 1 September 2005 have been fully considered but they are not persuasive.

Applicant urges that Kanamaru put the vector in Arabidopsis, where the Arabidopsis MinD gene would be endogenous, while the Applicants put it in tobacco, where it would be exogenous; this is an important structural difference (response pg 13).

This is not found persuasive. Intended use does not change the structure of a composition; the structure is the same in both cases. The vector taught by Kanamaru et al is a

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species of the vectors comprising nucleic acid encoding proteins with 95% identity to the protein encoded by the Arabidopsis MinD gene claimed in the instant application.

Furthermore, as genes comprise a promoter and a coding region, and as the 35S promoter is exogenous to a plant, the construct used by Kanamaru et al is exogenous to Arabidopsis.

13. Claims 1-7, 10-14 and 28-30 rejected under 35 U.S.C. 102(b) as being anticipated by Osteryoung (US Patent 6,982,364, filed April 1999).

Osteryoung teaches plants comprising a exogenous gene that encodes an Arabidopsis MinD protein and methods of making the plants (claims 1-8 and 23-25). Osteryoung also teaches vectors comprising an exogenous gene that encodes an Arabidopsis MinD protein operably linked to a 35S promoter (column 9, line 55, to column 10, line 13).

Conclusion

14. No claim is allowed.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (571) 272-0801. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

The central fax number for official correspondence is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

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Anne Kubelik, Ph.D.

January 19, 2006



ANNE KUBELIK, PH.D.
PRIMARY EXAMINER